

HONEYBEE – A NATURAL POLLINATOR IN INCREASING THE SEED YIELD AND INCOME IN THE NIGER (*GUIZOTIA ABYSSINICA* CASS) A TRADITIONAL TRIBAL CROP OF SOUTH GUJARAT REGION

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Abstract: Niger (*Guizotia abyssinica* Cass) is one of the important minor oilseed crop of hilly regions and it is used for oil purpose only by the tribal people. Therefore a study was planned to document about the role of honeybees as a pollinator in increasing the seed yield in Niger crop with paired plot technique at the Niger Research Station (NRS) at Navsari Agricultural University (NAU) and at farmer's field, Vanarasi, Navsari, Gujarat and also studied its cost benefit ratio (CB) of Niger cultivar. The trial was conducted at Niger Research Station (NRS), Vanarasi in 2014-15 and at farmer's field to ascertain the involvement of honey bees (*Aphis mellifera*) in escalating the seed yield of Niger crop (Due to pollination) and its effect on income due to increase in the Niger seed yield. Significant differences were observed for number of capitula/plant, number of seeds/capitula, 1000 seed weight and seed yield in both the location. However, the seed yield and gross returns were considerably higher in first location of T1 Natural plot/ open pollinated with Bee hive (*Aphis mellifera*). The maximum seed yield of 275 Kg/ha with the gross return of Rs. 16,500/- was obtained in this treatment.

Keywords: Niger, Honeybee, *Aphis mellifera*, Pollination

REFERENCES

- Donaldson, J. S. (2002). Pollination in Agricultural landscapes, a South African perspective. In: Kevan P. and Imperatriz Fonseca VL (eds) Pollinating Bees The Conservation Link between Agriculture and Nature Ministry of Environment/Brasilia Pp 97-104.
- Duhoon, S. S. (2001). Niger (*Guizotia abyssinica* Cass) Nucleus and breeder seed production manual. AICRP on sesame and Niger (ICAR) JNKVV Jabalpur page 1.
- Free, J. B. (1993). Insect Pollination of Crops (2nd ed.). San Diego, CA: Academic Press
- Gallai, N., Salles, J. M., Settele, J and Vaissiere, B. E. (2009). Economic valuation of the vulnerability of world agriculture confronted with pollinator decline. *Ecological Economics* 68 (2009): 810-821.
- Greenleaf, S. S. and Kremen, C. (2006). Wild bees enhance honeybees' pollination of hybrid onion. Proceedings of the National Academy of Sciences of the USA 103: 13890-13895.
- Johannsmeier, M. F. and Mostert, J. N. (2001). Crop pollination. In: Johannsmeier, M. F. (Ed.), Beekeeping in South Africa, 3rd edition, revised, Plant Protection Research Institute handbook 14. Agricultural Research Council of South Africa, Pretoria, South Africa, pp 235-245.
- http://agritech.tnau.ac.in/farm_enterprises/fe_api_bee_floraapollin.html
- Kearns, C. A., Inouye, D. W. and Waser, N. M. (1998). Endangered mutualisms: the conservation of plant-pollinator interactions. *Annual Review of Ecology and Systematics* 28 (1998): 83-112.
- Rajpurohit, T.S. (2011). Diseases of Niger Their Management. *Plant Science Feed.* 1 (2): 19-22.
- Rao, V. L. N. and Ranganatha, A. R. G. (1989). Niger In Agriculture in Andhara Pradesh, Vol.II Crops, SAA (Ed.), Hyderabad. Pp. 184-186.
- Shrestha, J. B. (2004). Honeybees and Environment. Agriculture and Environment. Gender Equity and Environment Division. Ministry of Agriculture and Cooperatives, HMG, Nepal, pp 1-8.
- Staffen-Dewenter, I. and Tscharrntke, T. (1999). Effects of habitat isolation on pollinator communities and seed set. *Oecologia* 121 (1999): 432- 440.
- Yucel, B. and Duman, I. (2005). Effects of foraging activity of honeybees (*Apis mellifera* L.) on onion (*Allium cepa*) seed production and quality. *Pakistan Journal of Biological Sciences* 8 (1) 123-126.

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